WHAT IS CLAIMED IS:

1. A noise elimination device, comprising:

a housing provided with coaxial connectors on both ends; and

a noise elimination circuit arranged inside the housing;

wherein a ground conductor thickness of a coupling portion coupling the noise elimination circuit with the coaxial connectors is at least twice a skin depth due to the skin effect at a transmission signal frequency.

2. The noise elimination device according to Claim 1, wherein the noise elimination circuit includes a coil made by winding a coaxial cable around at least one of an open magnetic core and a closed magnetic core.

3. The noise elimination device according to Claim 2, wherein the noise elimination device further includes a highpass filter arranged in series with the coil.

4. A method for installing a noise elimination device, the noise elimination device comprising:

a housing provided with coaxial connectors on both ends; and

a noise elimination circuit arranged inside the housing;

wherein a ground conductor thickness of a coupling portion coupling the noise elimination circuit with the coaxial connectors is at least twice a skin depth due to the skin effect at a transmission signal frequency;

wherein the noise elimination circuit includes a coil made by winding a coaxial cable around at least one of an open magnetic core and a closed magnetic core; and

wherein the noise elimination device further includes a highpass filter arranged in series with the coil;

the method comprising:

placing the coil closer to a noise generating side than the highpass filter when installing the noise elimination device in a signal transmission line including a coaxial cable.

5. The noise elimination device according to Claim 1, wherein the noise elimination circuit is made by coupling the core conductors of the two coaxial connectors via a first coil wound around a ferrite core, coupling the outer conductors of the two coaxial connectors via a second coil wound around the ferrite core, inserting a capacitor on at least one of the two sides of both the first and second coil, providing a first choke coil in parallel with the first coil and the capacitor provided on the side of the first coil, and providing a second choke coil in parallel with the second coil and the capacitor provided on the side of the second coil.

6. The noise elimination device according to any of Claims 1, 3 and 5, wherein one of the coaxial connectors is a plug connector and the other coaxial connector is a jack connector.

7. The noise elimination device according to any of Claims 1, 3 and 5, wherein the housing is substantially tube–shaped and the two ends of the housing are insulated from one another.

8. The noise elimination device according to Claim 6, wherein the housing is substantially tube–shaped and the two ends of the housing are insulated from one another.

9. The noise elimination device according to any of Claims 1, 3 and 5, wherein the two coaxial connectors are formed each in independent housings, the two housings are connected with a coaxial cable, and the coil is provided

in one of the two housings.

10. The noise elimination device according to Claim 6, wherein the two coaxial connectors are formed each in independent housings, the two housings are connected with a coaxial cable, and the coil is provided in one of the two housings.

11. The noise elimination device according to Claim 5, wherein the first and the second coil are made by serially winding around two ferrite cores, wherein one ferrite core is a closed magnetic ferrite core and the other ferrite core is an open magnetic ferrite core.

12. The noise elimination device according to Claim 6, wherein the first and the second coil are made by serially winding around two ferrite cores, wherein one ferrite core is a closed magnetic ferrite core and the other ferrite core is an open magnetic ferrite core.

13. The noise elimination device according to Claim 7, wherein the first and the second coil are made by serially winding around two ferrite cores, wherein one ferrite core is a closed magnetic ferrite core and the other ferrite core is an open magnetic ferrite core.

14. The noise elimination device according to Claim 8, wherein the first and the second coil are made by serially winding around two ferrite cores, wherein one ferrite core is a closed magnetic ferrite core and the other ferrite core is an open magnetic ferrite core.

15. The noise elimination device according to Claim 9, wherein the first and the second coil are made by serially winding around two ferrite cores, wherein one ferrite core is a closed magnetic ferrite core and the other ferrite

core is an open magnetic ferrite core.

16. The noise elimination device according to Claim 10, wherein the first and the second coil are made by serially winding around two ferrite cores, wherein one ferrite core is a closed magnetic ferrite core and the other ferrite core is an open magnetic ferrite core.

17. The noise elimination device according to Claim 5, wherein a conductor of the first coil is made of a center conductor and a conductor of the second coil is made of an outer conductor covering the center conductor, so that the coil conductors are arranged as a coaxial cable.

18. The noise elimination device according to Claim 6, wherein a conductor of the first coil is made of a center conductor and a conductor of the second coil is made of an outer conductor covering the center conductor, so that the coil conductors are arranged as a coaxial cable.

19. The noise elimination device according to Claim 7, wherein a conductor of the first coil is made of a center conductor and a conductor of the second coil is made of an outer conductor covering the center conductor, so that the coil conductors are arranged as a coaxial cable.

20. The noise elimination device according to Claim 8, wherein a conductor of the first coil is made of a center conductor and a conductor of the second coil is made of an outer conductor covering the center conductor, so that the coil conductors are arranged as a coaxial cable.

21. The noise elimination device according to Claim 9, wherein a conductor of the first coil is made of a center conductor and a conductor of the second coil is made of an outer conductor covering the center conductor, so

that the coil conductors are arranged as a coaxial cable.

22. The noise elimination device according to Claim 10, wherein a conductor of the first coil is made of a center conductor and a conductor of the second coil is made of an outer conductor covering the center conductor, so that the coil conductors are arranged as a coaxial cable.

23. The noise elimination device according to Claim 11, wherein a conductor of the first coil is made of a center conductor and a conductor of the second coil is made of an outer conductor covering the center conductor, so that the coil conductors are arranged as a coaxial cable.

24. The noise elimination device according to Claim 12, wherein a conductor of the first coil is made of a center conductor and a conductor of the second coil is made of an outer conductor covering the center conductor, so that the coil conductors are arranged as a coaxial cable.

25. The noise elimination device according to Claim 13, wherein a conductor of the first coil is made of a center conductor and a conductor of the second coil is made of an outer conductor covering the center conductor, so that the coil conductors are arranged as a coaxial cable.

26. The noise elimination device according to Claim 14, wherein a conductor of the first coil is made of a center conductor and a conductor of the second coil is made of an outer conductor covering the center conductor, so that the coil conductors are arranged as a coaxial cable.

27. The noise elimination device according to Claim 15, wherein a conductor of the first coil is made of a center conductor and a conductor of the second coil is made of an outer conductor covering the center conductor, so

that the coil conductors are arranged as a coaxial cable.

28. The noise elimination device according to Claim 16, wherein a conductor of the first coil is made of a center conductor and a conductor of the second coil is made of an outer conductor covering the center conductor, so that the coil conductors are arranged as a coaxial cable.

29. The noise elimination device according to Claim 5, wherein the ferrite core orthogonally intersects with a substrate, and the coil is formed by pattern formation of a coil conductor on the substrate in a shape that is wound around the ferrite core.

30. The noise elimination device according to Claim 6, wherein the ferrite core orthogonally intersects with a substrate, and the coil is formed by pattern formation of a coil conductor on the substrate in a shape that is wound around the ferrite core.

31. The noise elimination device according to Claim 7, wherein the ferrite core orthogonally intersects with a substrate, and the coil is formed by pattern formation of a coil conductor on the substrate in a shape that is wound around the ferrite core.

32. The noise elimination device according to Claim 8, wherein the ferrite core orthogonally intersects with a substrate, and the coil is formed by pattern formation of a coil conductor on the substrate in a shape that is wound around the ferrite core.

33. The noise elimination device according to Claim 9, wherein the ferrite core orthogonally intersects with a substrate, and the coil is formed by pattern formation of a coil conductor on the substrate in a shape that is

wound around the ferrite core.

34. The noise elimination device according to Claim 10, wherein the ferrite core orthogonally intersects with a substrate, and the coil is formed by pattern formation of a coil conductor on the substrate in a shape that is wound around the ferrite core.

35. The noise elimination device according to Claim 11, wherein the ferrite core orthogonally intersects with a substrate, and the coil is formed by pattern formation of a coil conductor on the substrate in a shape that is wound around the ferrite core.

36. The noise elimination device according to Claim 12, wherein the ferrite core orthogonally intersects with a substrate, and the coil is formed by pattern formation of a coil conductor on the substrate in a shape that is wound around the ferrite core.

37. The noise elimination device according to Claim 13, wherein the ferrite core orthogonally intersects with a substrate, and the coil is formed by pattern formation of a coil conductor on the substrate in a shape that is wound around the ferrite core.

38. The noise elimination device according to Claim 14, wherein the ferrite core orthogonally intersects with a substrate, and the coil is formed by pattern formation of a coil conductor on the substrate in a shape that is wound around the ferrite core.

39. The noise elimination device according to Claim 15, wherein the ferrite core orthogonally intersects with a substrate, and the coil is formed by pattern formation of a coil conductor on the substrate in a shape that is

wound around the ferrite core.

40. The noise elimination device according to Claim 16, wherein the ferrite core orthogonally intersects with a substrate, and the coil is formed by pattern formation of a coil conductor on the substrate in a shape that is wound around the ferrite core.

41. The noise elimination device according to any of Claims 3 and 5, further comprising a transformer connected in series to the coil.

42. The noise elimination device according to Claim 6, further comprising a transformer connected in series to the coil.

43. The noise elimination device according to Claim 7, further comprising a transformer connected in series to the coil.

44. The noise elimination device according to Claim 8, further comprising a transformer connected in series to the coil.

45. The noise elimination device according to Claim 9, further comprising a transformer connected in series to the coil.

46. The noise elimination device according to Claim 10, further comprising a transformer connected in series to the coil.

47. The noise elimination device according to Claim 11, further comprising a transformer connected in series to the coil.

48. The noise elimination device according to Claim 12, further comprising a transformer connected in series to the coil.

49. The noise elimination device according to Claim 13, further comprising a transformer connected in series to the coil.

50. The noise elimination device according to Claim 14, further comprising a transformer connected in series to the coil.

51. The noise elimination device according to Claim 15, further comprising a transformer connected in series to the coil.

52. The noise elimination device according to Claim 16, further comprising a transformer connected in series to the coil.

53. The noise elimination device according to Claim 17, further comprising a transformer connected in series to the coil.

54. The noise elimination device according to Claim 18, further comprising a transformer connected in series to the coil.

55. The noise elimination device according to Claim 19, further comprising a transformer connected in series to the coil.

56. The noise elimination device according to Claim 20, further comprising a transformer connected in series to the coil.

57. The noise elimination device according to Claim 21, further comprising a transformer connected in series to the coil.

58. The noise elimination device according to Claim 22, further comprising a transformer connected in series to the coil.

59. The noise elimination device according to Claim 23, further comprising a transformer connected in series to the coil.

60. The noise elimination device according to Claim 24, further comprising a transformer connected in series to the coil.

61. The noise elimination device according to Claim 25, further comprising a transformer connected in series to the coil.

62. The noise elimination device according to Claim 26, further comprising a transformer connected in series to the coil.

63. The noise elimination device according to Claim 27, further comprising a transformer connected in series to the coil.

64. The noise elimination device according to Claim 28, further comprising a transformer connected in series to the coil.

65. The noise elimination device according to Claim 11, wherein the closed magnetic core is made of a plurality of cut cores.

66. The noise elimination device according to Claim 12, wherein the closed magnetic core is made of a plurality of cut cores.

67. The noise elimination device according to Claim 13, wherein the closed magnetic core is made of a plurality of cut cores.

68. The noise elimination device according to Claim 14, wherein the closed magnetic core is made of a plurality of cut cores.

69. The noise elimination device according to Claim 15, wherein the closed magnetic core is made of a plurality of cut cores.

70. The noise elimination device according to Claim 16, wherein the closed magnetic core is made of a plurality of cut cores.

71. The noise elimination device according to Claim 17, wherein the closed magnetic core is made of a plurality of cut cores.

72. The noise elimination device according to Claim 18, wherein the closed magnetic core is made of a plurality of cut cores.

73. The noise elimination device according to Claim 19, wherein the closed magnetic core is made of a plurality of cut cores.

74. The noise elimination device according to Claim 20, wherein the closed magnetic core is made of a plurality of cut cores.

75. The noise elimination device according to Claim 21, wherein the closed magnetic core is made of a plurality of cut cores.

76. The noise elimination device according to Claim 22, wherein the closed magnetic core is made of a plurality of cut cores.

77. The noise elimination device according to Claim 23, wherein the closed magnetic core is made of a plurality of cut cores.

78. The noise elimination device according to Claim 24, wherein the closed magnetic core is made of a plurality of cut cores.

79. The noise elimination device according to Claim 25, wherein the closed magnetic core is made of a plurality of cut cores.

80. The noise elimination device according to Claim 26, wherein the closed magnetic core is made of a plurality of cut cores.

81. The noise elimination device according to Claim 27, wherein the closed magnetic core is made of a plurality of cut cores.

82. The noise elimination device according to Claim 28, wherein the closed magnetic core is made of a plurality of cut cores.